



Virginia

Coastal Zone Management

Fall 2019/Winter 2020



Look what NOAA's Okeanos Explorer research vessel discovered off Virginia's coast - see page 4!



Protecting, restoring, and strengthening our coastal ecosystems and economy in partnership with NOAA.



Virginia Coastal Zone Management

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Virginia's coastal zone includes the 29 counties and 17 cities of Tidewater Virginia and all tidal waters to the three-mile territorial sea boundary. The Virginia CZM Program is a network of state and local government agencies working together to create more vital and sustainable coastal communities and ecosystems through state and local laws and policies implemented by:

Virginia Department of Environmental Quality – lead agency
Virginia Department of Conservation and Recreation
Virginia Department of Game and Inland Fisheries
Virginia Department of Health
Virginia Marine Resources Commission
Tidewater local governments

Virginia CZM is guided by a Coastal Policy Team that provides a forum for managing cross-cutting coastal resource issues and is comprised of the partner agencies listed above as well as:

Virginia Department of Agriculture and Consumer Services
Virginia Department of Emergency Management
Virginia Department of Forestry
Virginia Department of Historic Resources
Virginia Department of Mines, Minerals and Energy
Virginia Department of Transportation
Virginia Economic Development Partnership
Virginia Institute of Marine Science
Virginia Planning District Commissions (8 Tidewater regions)
William & Mary Coastal Policy Center

The Virginia CZM Program is part of the national coastal zone management program, a voluntary partnership between the National Oceanic and Atmospheric Administration and U.S. coastal states and territories authorized by the Coastal Zone Management Act of 1972, as amended.

Virginia Coastal Zone Management highlights coastal resource management issues in the Commonwealth, with a focus on initiatives and projects coordinated through the Virginia CZM Program. Direct comments and subscription requests to Virginia Witmer, editor/graphic designer, Virginia.Witmer@DEQ.virginia.gov.

Message from the Manager



Laura McKay, Virginia CZM Program Manager, releases a rehabilitated Kemp's ridley sea turtle. Photo by Mark Swingle, Virginia Aquarium.

2019 marked the beginning of construction of the country's first offshore wind turbines in federal waters. The conduit for the transmission cable was laid last summer and the two test turbines within Virginia's research lease area will go up next summer. As a member of the Virginia Offshore Wind Development Authority and recent Chair of the new Mid-Atlantic Committee on the Ocean (see page 2), these are exciting times. Our coast and adjacent ocean waters are becoming incredibly busy places, and we have much to do to ensure their health and sustainability – like ensuring endangered sea turtles such as this rehabilitated Kemp's ridley (*photo at left*), have safe space to thrive. This move to renewable offshore wind is a major milestone in the Commonwealth's path to climate resiliency and energy independence.

The Virginia CZM Program continues to thrive, thanks to consistent funding from NOAA, and we also have welcomed a new Coastal Planner, Jeff Flood (see page 24). In this issue, we'll catch you up on some of our major accomplishments – from conserving land through acquisition and native plantings, to helping to build coastal resilience, to curbing marine debris and promoting ecotourism and shellfish aquaculture. And we're also planning for future efforts through development of a new, three-year focal area for funding (October 2020 through September 2023) and a new, five-year Coastal Needs Assessment (draft due in May 2020) for Strategy grants that will begin in October 2021 (see page 26).

Laura McKay

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Virginia Coastal Zone
MANAGEMENT PROGRAM

Visit us on the Web at www.deq.virginia.gov/Programs/CoastalZoneManagement.aspx.

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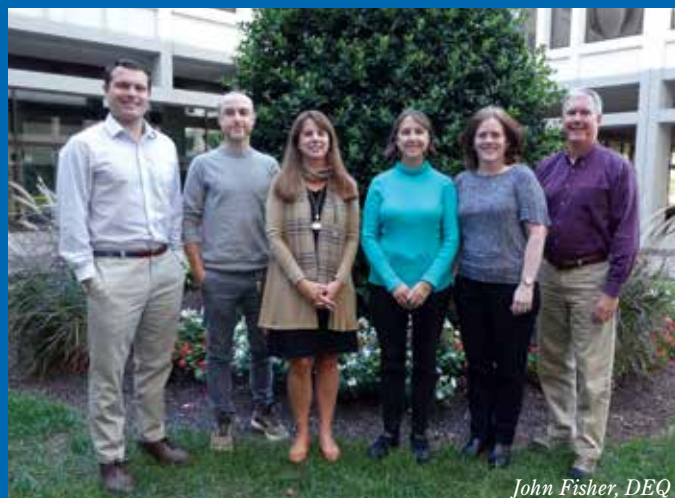
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PLANNING OCEAN USES

The Winds and Waves of Ocean Changes

By Laura McKay, Virginia CZM

Much has changed since the last issue of our magazine. A July 2018 federal Executive Order (EO) abolished the Mid-Atlantic Regional Planning Body, which was a group of federal, state and tribal representatives charged with developing a Mid-Atlantic Ocean Action Plan. That plan was completed and approved by the National Ocean Council in 2016 ([see https://www.boem.gov/Mid-Atlantic-Regional-Ocean-Action-Plan/](https://www.boem.gov/Mid-Atlantic-Regional-Ocean-Action-Plan/)). Although a new EO, 13840, (Ocean Policy to Advance the Economic, Security and Environmental Interests of the US), does not require federal agencies to adhere to that plan, it does encourage federal agencies to collaborate with state-led regional ocean partnerships such as the Mid-Atlantic Regional Council on the Ocean (MARCO) on ocean issues of mutual interest.

MARCO Creates MACO

In March 2019, MARCO held a Mid-Atlantic Ocean Forum at which agreement was reached that MARCO should create a Mid-Atlantic Committee on the Ocean (MACO) to collaborate with federal agencies, tribes and the Mid-Atlantic Fisheries Management Council on the many ocean issues we are facing. Many work groups set up under the 2016 plan are continuing their efforts, such as on marine debris, ocean acidification, non-consumptive recreation and commerce & maritime safety. New work groups may also be created under MACO to deal with issues of sand management and offshore wind and fisheries interactions.

MACO's progress can be tracked at <http://midatlanticocean.org/mid-atlantic-committee-on-the-ocean/>. View videos there of the 1st Mid-Atlantic Ocean Forum that was held at Monmouth University in New Jersey. Be sure to look there for news of the 2nd annual Mid-Atlantic Ocean Forum scheduled for May 2020. Work plans and progress reports prepared by work groups are also posted there.

Mapping the Mid-Atlantic

MARCO's Ocean Data Portal continues to improve with new map stories, data layers and functions. The portal now contains over 6,000 data layers within its 11 themes: administrative, fishing, marine life, marine life library, maritime, oceanography, fishing – communities at sea (by port), recreation, renewable energy, security and socioeconomic. The portal also allows users to import their own data layers into it when you set up



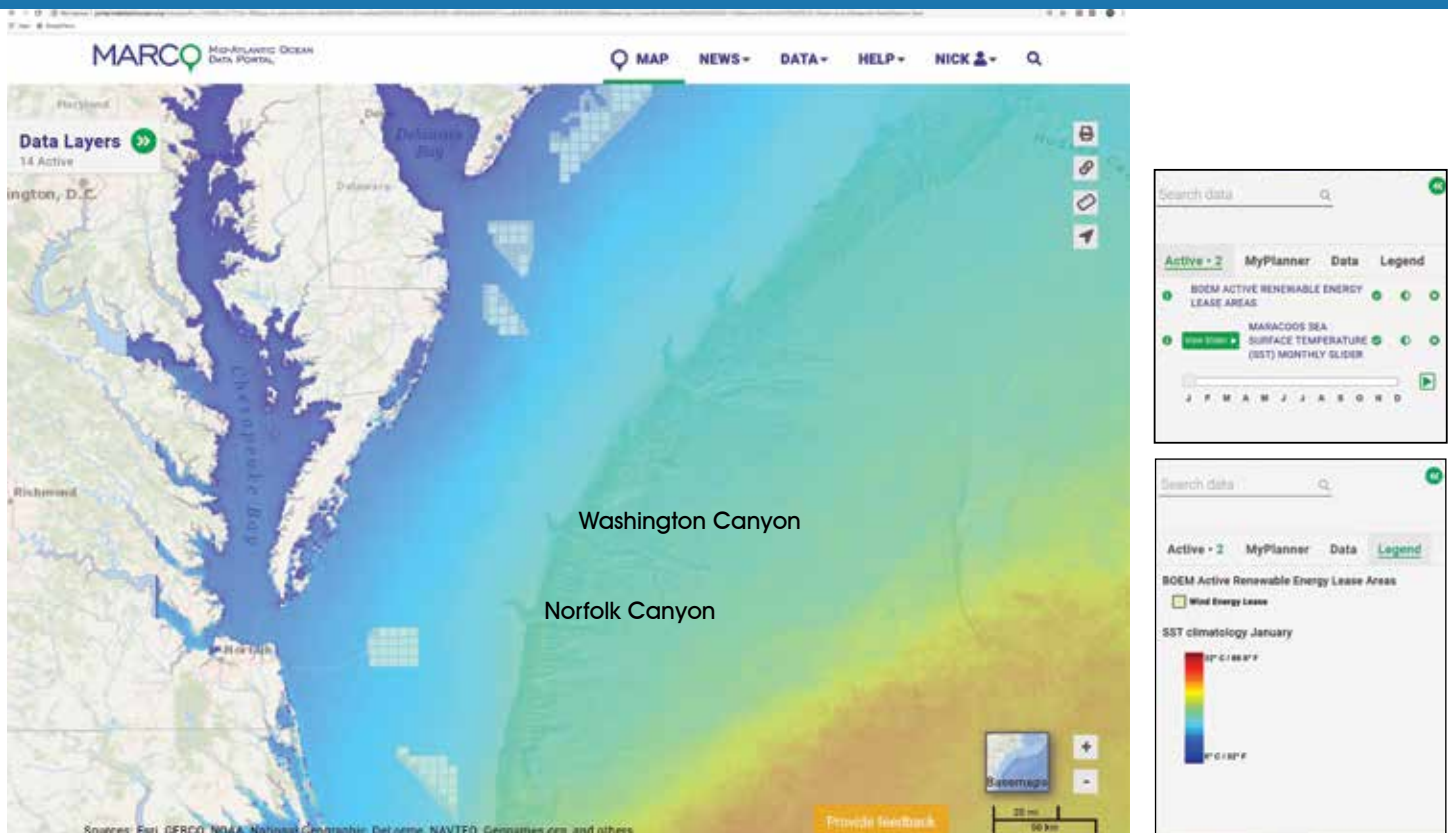
(l-r) Laura McKay, Virginia CZM Program; Darlene Finch, NOAA; Liz Semple, NJDEP/MARCO and former Mid-Atlantic Regional Council on the Ocean chair, kick off the discussions at the Mid-Atlantic Ocean Forum held at Monmouth University. Photo courtesy of Monmouth University Urban Coast Institute.

a personal account (www.portal.midatlanticocean.org). The “marine life library” alone has thousands of maps, searchable by species, of marine mammals, seabirds and fish. Also new are maps showing locations where ocean acidity is monitored and where submarine cables are located.

As Virginia ramps up its offshore wind efforts, it is key to understand where important fisheries are located so that we don't impede the activities of our lucrative commercial and recreational fishing industries. To that end, maps of bottom trawl, dredge, gillnet longline and pots and traps fisheries were created that can be queried as to the ports from which fishermen come to fish in those areas.



In 2017, 745,087 pounds of Black Sea Bass, worth \$2,074,189 dollars, were landed in Virginia. Photo and data courtesy of NOAA.



The MARCO Ocean Data Portal now features a sea surface temperature (SST) slide bar and animation to display ocean surface temperatures month by month. January temperatures are shown above. Creatures found in the deep sea canyons (labeled on the map above) are shown on pages 4-5. Image courtesy of MARCO.

And given that fish populations are generally shifting their ranges to colder waters as sea temperatures rise, the portal will soon offer slider bars for 18 fish species to show how populations have shifted in the past, decade by decade, as well as where they may go in the future. An example of a slider bar is currently on the portal for sea surface temperature (see map at the top of the page).

Virginia Offshore Wind Becoming a Reality

With the conduit for the electrical transmission cable laid in summer 2019 and two turbines due to be installed within

Virginia's research lease in summer 2020, the Commonwealth is on its way to being the first in the U.S. to produce renewable offshore wind in federal waters. This research lease will help inform how the commercial lease held by Dominion will be used to produce 2,600 megawatts by 2026.

Using the "communities at sea" fishing maps, Virginia CZM is proposing "geographic location descriptions" of important fishing areas in the Mid-Atlantic. Upon approval by NOAA, designation of these areas would ensure that the Commonwealth has automatic authority to review federal actions affecting those areas in federal waters and ensure that they are consistent with protection of resources of economic value to Virginia (e.g. fisheries). 🐟

For more information contact Laura.McKay@DEQ.virginia.gov; (804) 698-4323.



Large barges (photo left) will be used by Orsted and Dominion to transport and install Virginia's off-shore wind turbines in summer 2020. Photo by Orsted and courtesy of Dominion Energy.

EXPLORING VIRGINIA'S CANYONS

*Photos from Windows to the Deep 2019:
NOAA's Exploration of the Deep-sea Habitats
of the Southeastern US Aboard the Okeanos Explorer*



The steep ledges of Norfolk Canyon are home to a large diversity of life. Here, a seastar resides on the wall next to a colony of deep-sea octocoral.



This synphobranchid eel was seen preying on a fish.



A dumby octopus, most likely Stauroteuthis syrtensis.



A sea pen and pycnogonid sea spider.



A close-up view of mussels and bacterial mats at a methane seep near Norfolk Canyon.



Mission control during an remotely operated vehicle (ROV) dive onboard NOAA Ship Okeanos Explorer.



Little is known about the lobate ctenophore, a deepwater gelatinous organism.



Close-up view of coral, Enallipsammia profunda, with polyps extended for feeding.



This deep-sea lizardfish seen at a depth of 5,282 feet.

Scientists explored a diversity of features, including deep-sea fish habitats, deep-sea coral and sponge communities, midwater habitats, cold seeps, submarine canyons, submarine landslides and other unique geological features. The pictures below highlight what the team found on July 8 in the Washington Canyon (dive depth range: 1,519 - 3,251 feet) and on July 11 in the Norfolk Deep Seep (dive depth range: 4,993 - 5,299 feet).



A sea pen (Pennatulacea) with a small shrimp (Mysida) visible in the background.

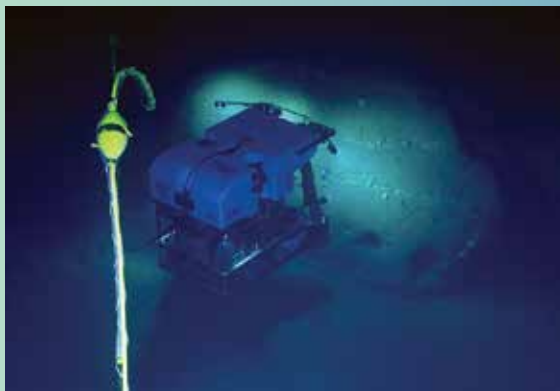


This monkfish was hard to spot camouflaged against the seafloor around 861 meters (2,825 feet) depth in Washington Canyon.



A colorful jelly extends its tentacles to feed.

A tripod fish (Bathypterois grallator) is a blind ambush predator that rests on a modified set of fins, awaiting a meal to pass close enough to catch.



The remotely operated vehicle (ROV) Deep Discoverer of the Windows to the Deep 2019 expedition.



A wreckfish was observed capturing and eating a shark.

This octopus, Muusoctopus johnsonianus, was seen in Norfolk Canyon. This species is unique in having reverse countershading, light on top and dark on bottom, unlike other octopods.



Several large coral colonies seen at 2,493 feet, including black coral, hosting several flytrap anemones (Actinoscyphia aurelia) and squat lobsters, that use the coral to get farther off the seafloor and into nutrient-delivering currents.



All photos courtesy of the NOAA Office of Ocean Exploration and Research, Windows to the Deep 2019. <https://oceanexplorer.noaa.gov/oceanos/explorations/ex1903/welcome.html>.

CONSERVING LAND AND ECONOMIES



By Laura McKay, Virginia CZM Program

Will Stuart

Since the 1990s, the Virginia CZM Program has been part of a land conservation group formerly called the “Southern Tip Partnership.” The group, consisting of US Fish & Wildlife Service, The Nature Conservancy, Virginia CZM Program, the Departments of Conservation & Recreation (DCR) and Game & Inland Fisheries (DGIF) – came together under a Memorandum of Understanding (MOU) to pool resources to acquire and restore land for migratory bird habitat – especially neotropical songbirds whose populations have been in significant decline for decades due to habitat loss and fragmentation. These songbirds, especially the young of the year, fly hundreds of miles along the east coast each night only stopping at a few places to rest and feed. The southern tip of the Eastern Shore is one of those places that provide a critical rest stop during the birds’ fall migration from Canada and the northeastern U.S. to Central and South America.

Since the 1990s, the partners have acquired, protected and restored several thousand acres with the native vegetation these birds need for food and cover from predators. With the urging of the Southern Tip Partnership, Virginia CZM and Eastern Shore local governments undertook a study by George Mason University (see the 2018 issue of the *Virginia Coastal Zone Management* magazine on the Virginia CZM website) of the fiscal and socio-economic impacts of land conservation, which confirmed the net positive economic impact of conserved land to the localities’ budgets.


In the fall of 2018, the 54-acre “Medlin” tract of the Magothy Bay Natural Area Preserve (NAP) was purchased with \$264,800 in Virginia CZM funds (89% of cost) and funds from the Virginia Land

Conservation Foundation (VLCF). In spring 2019, Virginia CZM funds (\$221,000; 40% of cost) added another 106 acres (the “Spady” tract) to the NAP. The VLCF provided the balance of the purchase cost.

Wax myrtle (*Morella cerifera*), a fast-growing native evergreen shrub, provides year-round bird cover, fixes nitrogen and rapidly provides a preferred food source. DCR staff and volunteers, with Virginia CZM funds, planted 1,178 Wax Myrtle shrubs and 340 White Oak saplings (*Quercus Alba*). The 6-9 foot saplings will provide immediate perching branches for birds, as well as the structure needed to jump start natural forest layers. Birds will help establish a more diverse forest by bringing in seeds of their favorite food plants (via droppings), such as American Beautyberry (*Callicarpa americana*; enjoyed by the Black-throated Blue Warbler in the photo above). Other preferred food plants the birds will help plant will likely include Black Cherry, Blackgum, Sassafras and Muscadine Grape. Common Milkweed seed (*Asclepias syrica*) was dispersed for pollinators along the Southern Tip’s Hike and Bike Trail.



Photo by Dot Field.

Recently the partners met and, noting that the original MOU had technically expired, decided to broaden the partnership and its mission and re-name itself the Virginia Eastern Shore Conservation Alliance (VESCA). VESCA will continue its land conservation efforts across the entire Eastern Shore with an eye toward all wildlife and increasing climate resiliency. VESCA will also improve communication with the local community, promote ecotourism and prioritize research needs. 

For more information, contact Laura.McKay@DEQ.virginia.gov or (804) 698-4323.



Chickahominy Watershed In the Eyes of Those Who Know It

By Jeff Flood, Virginia CZM Program

Nick Meade, VA CZM

The “Lower Chick” project, as it’s affectionately nicknamed by project team members, continues to move forward into a new phase focused on direct stakeholder engagement. The project has been an ongoing assessment of the natural and cultural resources of the Lower Chickahominy River watershed, which spans Charles City, James City and New Kent counties. Since 2017, Virginia CZM has provided grant funding to project partners to update the inventory of the watershed’s unique natural resources, to assess the economic value associated with land conservation and to further define stakeholder interests via interviews and workshops.


The current effort is part of a five-year strategy developed by Virginia CZM and Plan RVA to establish a collaborative planning process to create an overarching vision for land conservation priorities and sustainable industries for the watershed. The effort supports collaboration among natural resource agencies, local governments, businesses and non-profits to plan for the area’s future. Over the years, Virginia CZM has successfully employed this strategy on the Eastern Shore, the Southern Watersheds of Virginia Beach and Chesapeake and in the Dragon Run of Middle Peninsula. The Lower Chickahominy is another special place with high ecological value and potentially high ecotourism value, but it is also vulnerable to development that could detract from its unique natural and cultural resources.

The current phase (Year 4) of the project involves an expanded outreach strategy to further define stakeholder interests and issues and refine approaches for maximizing socio-economic and ecological benefits through coordinated planning activities. The strategy was

developed in year three of the project by the Institute for Engagement and Negotiation (IEN) at the University of Virginia convening and facilitating a Stakeholder Outreach Committee and conducting stakeholder interviews.

In August, toward the end of Year 3, IEN also facilitated three focus group sessions, each representing a core stakeholder category: natural and historic resources, government and business communities. Several positive issues emerged: increasing public access to the river, adding spurs and amenities to the Capital Bike Trail, incorporating more local and tribal history into watershed planning, developing a river corridor plan, enhancing ecotourism and conserving existing habitat and forest cover. Potential obstacles identified included: overcoming the “keep it as it is mentality,” a lack of identified financial resources and property acquisition for recreational access.

To begin Year 4, the project team distributed a survey to a broader stakeholder audience in late October, using the ideas drawn from the August focus group sessions.

The survey window closed in late November and results are currently being processed. The additional information captured by the survey will be incorporated into recommendations for watershed planning and policies. The final report for Year 3 will be on Virginia CZM’s website in late fall 2019. 

For more information, contact Jefferson.Flood@DEQ.virginia.gov or Laura.McKay@DEQ.virginia.gov.

“This effort to bring people together across disciplines to craft a vision for the watershed that preserves and promotes this resource is precisely what the Chickahominy Tribe believes in – a better world for the next seven generations.”

Chief Adkins of the Chickahominy Tribe

INCREASING CLIMATE RESILIENCY



Building resilience to climate change impacts in coastal Virginia requires a strong commitment and partnership among all levels of government, academia, businesses, citizen organizations and individuals. However, the actions of local governments are particularly critical because so many community resilience-building initiatives need to occur at the local level. Although localities may recognize the importance of the issue, undertaking or even identifying needed actions can be a challenge. This is especially true in more rural areas where staffing and resources are limited. In many cases, simply getting various departments, which are already busy with daily duties, to collaborate on resilience planning initiatives can be difficult.

Feedback from Virginia CZM partners identified this challenge as a priority for the Program to address through its coastal resilience initiatives. Beginning in 2008, Virginia CZM-supported projects at several coastal planning district commissions started to tackle the issue through various regional efforts. But stakeholders identified the need for a more standardized method for assessing local resilience in order to provide a common benchmark and to allow localities to compare their status with other coastal communities. Virginia CZM is advancing this concept by supporting two community resilience assessment initiatives.

"...Each locality has its own challenges and priorities, but a common need that The RAFT addresses is connecting localities with the resources they need to make real progress on environmental, economic, and social resilience."

Tanya Denckla Cobb, IEN

Resiliency and Adaptation Feasibility Tool

The RAFT (Resiliency and Adaptation Feasibility Tool) was developed by an interdisciplinary collaborative led by a core team from the University of Virginia Institute for Engagement and Negotiation, the William and Mary Virginia Coastal Policy Center and the Old Dominion University/Virginia Sea Grant Climate Adaptation and Resilience Program. Initially funded through a grant from the National Fish and Wildlife Federation, the tool uses a scorecard that is completed by graduate student assessors from the core team and reviewed by an advisory committee representing a wide range of disciplines. The tool was not designed for local self-assessments but rather for independent, objective evaluations. The scorecard helps localities define and measure their environmental, economic and social resilience. After the scorecard is completed, the core team meets with local representatives to develop a resilience action checklist that identifies actions to improve local resilience.

The tool was piloted in the Town of Cape Charles, the City of Portsmouth and Gloucester County. Virginia CZM then helped advance use of the RAFT by providing resources to follow up with the pilot localities, refine the scorecard, develop a RAFT website and expand use of the tool for a regional assessment of seven Eastern Shore localities. Scorecards were developed for the counties of Accomack and Northampton, and towns of Onancock, Saxis, Tangier, Chincoteague and Wachapreague based on online research, document review, phone consultations with relevant stakeholders and an in-depth review of the scores with each locality. Presentations were then made to local elected officials. A regional Resilience Action Workshop was held for localities to develop individual one-year resilience action checklists and also to identify actions that would be meaningful for the entire region. After the checklists were finalized and implementation teams established in each locality, the RAFT core team initiated monthly calls with the localities to provide support for moving action items forward.

The RAFT website (<https://ien.virginia.edu/raft>) provides information on the project's goals, history, funders and advisors. Tabs for each of the RAFT communities include

detailed information on the three pilot and seven Eastern Shore localities. A "Resources" tab, leads to other RAFT products and materials including research and policy papers, communication products, locality scorecards and checklists, as well as risk maps produced during various stages of the RAFT. The website will be updated with new resources as they are developed.

Feedback from localities that have been assessed through the RAFT process so far has been very positive. "The biggest surprise is the high level of gratitude voiced by localities for our focused approach and consistent support through the year," according to Tanya Denckla Cobb, director of the UVA Institute for Engagement and Negotiation. "Each locality has its own challenges and priorities, but a common need that the RAFT addresses is connecting localities with the resources they need to make real progress on environmental, economic, and social resilience. They're so grateful for our individual attention and support, and to know that they're now connected into a broader network of local, regional and state support for years to come." Based on this response, Virginia CZM is providing additional support for an evaluation of localities on the Northern Neck starting in the fall of 2019.

Evaluation Topics from the RAFT Scorecard



All photos by Aileen Devlin, Virginia Sea Grant.

POLICY, LEADERSHIP, AND COLLABORATION

- LOCALITY LEADERSHIP AND PLANNING FOR RESILIENCE
- LOCALITY LEADERSHIP AND RESPONDING TO AN EMERGENCY
- LOCAL COLLABORATION WITH STATE AGENCIES AND REGIONAL PDC
- ADAPTIVE MANAGEMENT
- THE NATIONAL FLOOD INSURANCE PROGRAM (NFIP) COMMUNITY RATING SYSTEM

RISK ASSESSMENT AND EMERGENCY MANAGEMENT

- FLOOD EXPOSURE AND VULNERABILITY ASSESSMENT
- RISK ASSESSMENT FOR VULNERABLE POPULATIONS
- BUSINESS AND ECONOMIC RISK ASSESSMENT
- HAZARD MITIGATION
- RESIDENT EMERGENCY PREPAREDNESS

COMMUNITY ENGAGEMENT, HEALTH, AND WELL-BEING

- PUBLIC INVOLVEMENT IN RESILIENCE PLANNING
- PROVIDING COASTAL RESILIENCE INFORMATION TO THE PUBLIC
- RESIDENT LEADERSHIP AND VOLUNTEER NETWORKS FOR COASTAL RESILIENCE
- RESILIENT SYSTEMS TO PROVIDE FOOD, HEALTH, AND MEDICINE
- PHYSICAL AND MENTAL HEALTH FOR SOCIAL EQUITY IN COMMUNITY RESILIENCE

PLANNING FOR RESILIENCE

- BUDGET, FUNDING, AND STATE & FEDERAL ASSISTANCE
- COASTAL RESILIENCY IN COMPREHENSIVE PLAN
- LAND USE ORDINANCES
- INCENTIVES FOR COASTAL RESILIENCE
- NATURAL RESOURCE PRESERVATION

INFRASTRUCTURE RESILIENCE

- STORMWATER INFRASTRUCTURE
- CRITICAL TRANSPORTATION INFRASTRUCTURE
- WATER SUPPLY AND WASTEWATER MANAGEMENT SERVICES
- NATURAL AND NATURE-BASED FEATURES

INCREASING CLIMATE RESILIENCY

The Community Rating System

One of the areas assessed through the RAFT is whether, or at what level, localities participate in the Community Rating System (CRS) under the National Flood Insurance Program. The CRS program provides an opportunity for participating localities to both build resilience to flooding and at the same time reduce flood insurance rates for local flood insurance policy holders. However, participation by Virginia's coastal localities is relatively low. To help expand local CRS use, Virginia CZM has funded work by Wetlands Watch to produce a series of reports and reach out to coastal localities. Wetlands Watch has extensive experience with CRS and a strong track record of working with localities on this issue. Topics addressed so far include:

- The costs and benefits of CRS participation, including co-benefits such as open space preservation, Chesapeake Bay cleanup credit, public access and recreational opportunities, and reducing the cost of providing emergency response services during flooding events.
- How to develop cross-jurisdictional CRS technical assistance programs and successful models for cost-sharing and financing these efforts from other regions of the country.
- Local resilience information and data needs, as well as potential funding resources to meet identified needs.

Wetlands Watch also interviewed coastal CRS communities from Virginia and other states to identify CRS Program modifications that would help communities to succeed in the CRS. Concerns identified range from the administrative burdens of program participation to activity-specific recommendations and commentary about the different issues faced by urban and rural communities. They presented their findings at several workshops across the state and at the Association of State Floodplain Managers (ASFPM) national conference in June 2018.

As a follow-up to this work, Virginia CZM supported Wetlands Watch in a project to offer local training and CRS evaluation meetings for twelve coastal localities. The meetings helped increase awareness of CRS benefits and offer an opportunity for local staff to get a head start on an application to join the program.



“The CRS Program offers coastal communities much more than flood insurance premium discounts...”

Mary-Carson Stiff, Wetlands Watch

The meetings also brought together staff from different local departments to share information and witness the comprehensive approach of the CRS. The trainings resulted in a review of activities for potential CRS credits and a spreadsheet of responses from staff that could serve as guidance for the CRS application process. Localities also received an estimate of how the locality might score if they join the CRS.

“The CRS Program offers coastal communities much more than flood insurance premium discounts,” explains Mary-Carson Stiff, Director of Policy at Wetlands Watch and



(above) Marshes like this near Chincoteague help reduce the impacts of storm surge. Photo by Mary-Carson Stiff.

(below) Preservation of open spaces, as well as elevating homes like this one in Poquoson, provide CRS credits for participating localities. Photo by William Stiles.



Another important aspect of assessing community resilience is evaluating the state of local marshes. Marshes and other wetlands help protect communities from flooding by absorbing storm surge and holding floodwaters.

There are a number of challenges to ensuring their long-term sustainability in the face of climate change and rising waters. To focus on these challenges and

share information on science and management, the Chesapeake Bay Sentinel Site Cooperative held a Marsh Resilience Summit on February 5-6 in Williamsburg.

Billed as “a conversation among communities, scientists, and managers in Coastal Virginia and Maryland,” the Summit brought together over 230 people to discuss topics such as marsh migration, using thin layer deposition of sediment to build marshes, and legal and policy challenges in protecting marshes.

The Cooperative is a Bay-wide collaborative network of sites that monitor sea level change impacts and works to build coastal resilience. They are currently using the recommendations from the Summit to advance the concept of marsh resilience through a number of efforts.

<http://chesapeakebayssc.org/marsh-summit/>

lead author of the CRS reports. “Communities can pursue CRS credit for actions that reduce flooding, increase public awareness, conserve habitat, and ultimately help mitigate the impacts of a changing climate. Garnering political support for stricter floodplain management practices may present a challenge, but offering insurance policyholders a financial benefit in return can help overcome this barrier.”

By helping coastal localities better assess their ability to deal with increased flooding and the other challenges of climate change, the Virginia CZM Program is hoping to identify the key steps necessary to build community resilience. The priorities that localities identify through the RAFT and CRS assessments will be critical not only for local actions but also state and federal resilience efforts. 🦋

For more information, contact Shep.Moon@DEQ.virginia.gov; (804) 698-4527.

PROMOTING ECOTOURISM

Trails for Paddling, Tasting and Learning about Virginia's Rural Coast

By Laura McKay, Virginia CZM

Ecotourism (responsible travel to natural areas that conserves the environment and improves the well-being of local people) can be a major economic driver for rural coastal Virginia. We have the goods! In October 2017, the Virginia CZM Program began a three-year funding effort to focus on promotion of ecotourism. The projects include marketing via websites, ecotour guide certification classes, on-the-ground signage and restoration of a boardwalk.

Using the Web & Social Media to Market Rural Coastal Virginia

Three rural coastal planning districts: Accomack-Northampton (Eastern Shore), Middle Peninsula and Northern Neck are using their Virginia CZM grant funds to promote ecotourism in their regions – especially for trails. They are linking existing trails (for paddling, oyster tasting and wildlife watching), building some new ones (e.g. an Eastern Shore Bayside Water Trail) and have created a single website to make it easier for tourists to explore all of these attractions.



Photo by Jeff Flood, VA CZM.

Fall is a fantastic time to get out, paddle, watch the fall bird migration and eat some oysters. Just go to <https://VirginiaWaterTrails.org> and “connect with world-class ecotourism destinations.” You can help support the economies of rural coastal localities by posting your photos at #RuralCoastalVA or #RCVA and signing up for the newsletter on the website – you’ll be the first to know about upcoming events.

This project also includes creation of an online trip planner for the Virginia Oyster Trail, which extends throughout rural coastal Virginia and allows you to select various oyster producers, restaurants and lodging establishments to map out your trip.

Ecotour Guide Certification Classes

On Tuesday evenings for 8 weeks beginning January 14, 2020, the Accomack-Northampton Planning District Commission (A-N PDC) will host online classes on ecosystem



science, customer service, business marketing, interpretive skills, natural history and culture. The course includes a mandatory spring field trip, and to earn the certification, students must meet participation requirements, pass quizzes and submit a final report. The Virginia CZM Program began funding these classes back in the 1990s, but their popularity has blossomed over the past few years. Shannon Alexander of the A-N PDC reports that one student and his wife opened a business on the Shore and are now renting out kayaks.

The Nature Conservancy's License Agreement to allow guides to conduct commercial tours on their barrier islands now states “Licensee must have....a valid Virginia Ecotour Guide Certification and provide TNC with a copy of such certification.”

To register for the course go to www.a-npdc.org/virginia-certified-ecotour-guide-course/.



Installing On-the-Ground Signage

With funding and staff support from Virginia CZM, A-N PDC and The Nature Conservancy (TNC) are installing new interpretive signs on both the Bayside and Seaside of Virginia's Eastern Shore. Back in the 2000s under Virginia CZM's Seaside Heritage Program, Virginia CZM installed 3-sided kiosks on the coast in Chincoteague, Wachapreague, Willis Wharf, Oyster and

Wise Point. Through a collaborative effort of the public landowners on the Shore and TNC, and with matching funds from TNC and Virginia CZM, the panels in these kiosks are being replaced with updated information that better promotes ecotourism at the specific location and also shows visitors what lies beyond the barrier islands in Virginia's Atlantic Ocean. These panels also have been installed at three additional Seaside locations in Accomack County: Gargatha Landing, Folly Creek and Queen Sound. This collaborative effort also includes a related website and brochure.



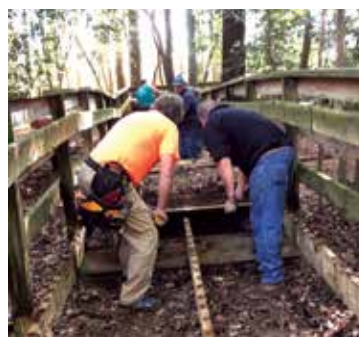
New signage in Onancock. Photo courtesy of A-NPDC.

On the Bayside, with Virginia CZM design assistance and a grant to A-N PDC, new kiosks were installed in Onancock and Saxis. The kiosks are in a style similar to one installed by Virginia CZM in Cape Charles a couple of years ago and highlight the ecological and historic significance of the communities.

Restoring Northampton's Seaside Boardwalk

In 2003 the Virginia CZM Program gave a \$60,000 grant to Northampton County to build a marsh trail and boardwalk just east of the County landfill near Oyster on the Seaside. Since then, the boardwalk deteriorated and was closed. A new Virginia CZM grant is providing funds to the County to repair the boardwalk and add interpretive signage. Thanks to assistance from Martina Coker, local Master Naturalists are providing match funds and will provide long-term maintenance of the boardwalk.

The boardwalk and its 12' x 24' foot terminal platform provide an unparalleled sweeping view of the Seaside. As renowned birding guide author, Ned Brinkley, marveled, "The site not only provides



(top) Ned Brinkley, John Coker and his grandson, and Chris Thomas of Northampton County's Public Works Department discuss plans for adding interpretive signage to the Seaside boardwalk. Photo by Martina Coker.

(middle) View from the boardwalk just after it was installed in 2003. Photo courtesy of VA CZM.

(bottom) Deteriorated boards are removed from the boardwalk. Photo by Martina Coker.

much-needed green space for people to get fresh air and exercise; it allows everyone to enjoy a range of habitats, from freshwater marsh to seaside pine forest, to saltwater lagoon, that holds one of the highest concentrations of bird diversity on the Eastern Shore..."

County Supervisor John Coker added, "Northampton County is very grateful for the grant received from Virginia CZM... Tourism and especially ecotourism is essential to the economy of our County. The natural beauty of the Eastern Shore attracts visitors from around the world who want to experience nature at its best...The view from this site is spectacular, with gorgeous, unspoiled barrier islands, and an enchanting seaside forest. We are very excited to have this access brought back to life." The boardwalk is expected to be re-opened by spring 2020. 🐾

For more information contact Laura.McKay@DEQ.virginia.gov; (804) 698-4323.

ENHANCING PUBLIC ACCESS



John Bateman, NNPDC

Improving the Visibility of Virginia CZM Investment in Public Access

By Jeff Flood, Virginia CZM

The Virginia CZM Program has funded 53 public water access sites and 25 separate land acquisitions since the program began in 1986. Public access sites include kayak launches, boardwalks, trails and observation decks, while acquired lands preserve unique coastal resources and ensure there are natural, peaceful places for Virginians and tourists to visit, recreate and learn about the ecosystems that sustain us.

Each site is required to erect an acknowledgement sign crediting the agencies and organizations that provided support for its acquisition and/or development, including Virginia CZM and NOAA. These acknowledgements are an important part of the program's visibility, demonstrating the value of publicly funded coastal management projects and how they physically work to connect the public to significant coastal features.


Virginia CZM staff is creating an inventory of acknowledgement signs currently in place, missing or in need of repair. Completing the inventory involves visiting, inspecting and photographing signs on site, followed by the prioritization



An example of older signage needing replacement, which will also offer an opportunity to update graphics and use more weather-proof materials. Photos courtesy of NNPDC.

of signs that are in need of repair, update or replacement. To date, staff have assessed nearly two dozen sites and determined that most require replacement signage. Partners who helped provide the public access and original signage will be invited to participate in the design process promoting their sites. In addition, Virginia CZM staff will work with local site managers on placement of signage to optimize visibility to the public.



Once the sign designs have been completed and locations finalized, they will be installed in 2020. The new signs will be constructed with weather-proof materials, photo-documented and added to the inventory. A map with site locations and information will be added to Virginia CZM's online GIS mapping portal, Coastal GEMS (www.deq.virginia.gov/Programs/CoastalZoneManagement/CoastalGEMS-GeospatialData.aspx). 

For more information, contact Jefferson. Flood@DEQ.virginia.gov; (804) 698-4151.

New Community Garden in King George Showcases Native Plants

By Virginia Witmer, Virginia CZM

On June 8, partners in the Plant Central Rapp Natives campaign dedicated a series of native plant demonstration gardens in Cedell Brooks, Jr. Park in King George County. Five gardens, including over 70 species and over 650 plants, showcase the color, variety and multiple benefits of natives.

Visitors will find a meadow garden, pollinator garden, rain garden and gardens demonstrating native plants suitable for difficult to landscape areas like hillsides and streetsides. To enhance their educational experience, visitors will also find interpretive signs and plant identification markers that include a description and engraved drawing of the plant.

The Plant Central Rapp Natives campaign promotes use of plants that are regionally native to the City of Fredericksburg and the counties of Caroline, King George, Spotsylvania, and Stafford. The campaign is part of a coast-wide effort by Virginia CZM to increase the demand and supply of Virginia native plants through public-private collaboration.

"Collaboration was key to installation of the gardens at Cedell Brooks, Jr. Park," shares Kate Gibson, Deputy Director with the George Washington Regional Commission (GWRC). "It has been such a pleasure to work with the various partners that have come together for the campaign and to make the demonstration gardens a reality." GWRC received multiple grants from Virginia CZM to develop and implement the campaign and to install the demo gardens.




Participation in the ribbon-cutting ceremony reflected the many partners involved in the demonstration landscaping project.



Artwood Gardens, Master Gardeners, Master Naturalists, Rappahannock Garden Club and King George County contributed over 577 volunteer and staff hours, valued at \$13,871, to help match the \$24,716 grant from the Virginia CZM Program for the gardens.

Retired King George Board of Supervisors member, Cedell Brooks Jr., for whom the garden is named, attended the dedication with his family.

"The county envisioned the park as an educational, discovery and demonstration facility where visitors can learn about the flora and fauna of our region, and the conservation practices that can be applied at home," explains Chris Clarke, Director of the King George Parks and Recreation Department. "We're excited that these new native plant gardens help us fulfill that mission." 

For more information, contact Virginia.Witmer@DEQ.virginia.gov; (804) 698-4320.

All photos courtesy of GWRC.



MARKETING NATIVE PLANTS

Making Natives the Norm

By Virginia Witmer, Virginia CZM

In April, the Virginia CZM Program, in collaboration with more than 20 partner state agencies and non-governmental organizations, launched the Plant RVA Natives campaign. The campaign is focused on increasing the use and supply of plants native to the Virginia Capital Region, which includes Henrico, Hanover, Chesterfield, Charles City, New Kent, Powhatan, Goochland, Cumberland and Amelia.

The Plant RVA Natives campaign is part of a coast-wide regional native plant marketing effort initiated and funded in large part by Virginia CZM through grants from NOAA.

The launch was hosted by Maymont and coincided with Herbs Galore and More, a popular event with gardeners, and a key audience for the campaign's message. The launch featured a presentation by Dr. Arthur Evans, entomologist and co-host of "What's Bugging You?" (WCVE radio), sponsored by the Department of Game and Inland Fisheries (DGIF) Habitat Partners© Program. Dr. Evans stressed the need to plant more native plants for native bees and other insects, some of Virginia's smallest but critically important wildlife, and many of which are in decline due to habitat loss.

"More people are realizing that their yards can be wonderful habitats, and that native plants provide essential food and shelter to wildlife," observed Carol Heiser, habitat education coordinator, DGIF. "We explained that the key is planting a diversity and abundance of natives." Over 200 gardeners pledged to Plant RVA Natives and received a decal to publicly display their commitment. Prior to the launch, Heiser



Plant RVA Natives partners at launch (l to r - Steve Clarke, WCVE; Peggy Singlemann, Maymont; Carol Heiser, DGIF; Irene Frentz, DCR State Parks; Virginia Witmer, VA CZM; and Dr. Art Evans). Photo by Shelby Crouch, DCR.

Native Plants for Virginia's Capital Region



appeared on "What's Bugging You?" to plug the campaign and launch (<https://ideastations.org/radio/news/plant-rva-natives>). The campaign also was highlighted on WCVE's Virginia Home Grown (www.pbs.org/show/virginia-home-grown/episodes/).

In addition to publishing the guide "Native Plants for Virginia's Capital Region," the campaign is partnering with local providers on point of sale marketing, such as signage and plant tags, to make it easier for consumers to identify plants as native to the region. The response has been very

encouraging. A tweet from Sneed's Nursery that read "So excited to support this initiative! We've got complementary guides to give to customers. Just ask an associate for one!" resulted in replies such as "What a perfect partnership!



Sneed's Nursery & Garden Center.

Yay! Loving this guide too! It's invaluable for designing my little pollinating backyard and as a botanical artist too!" and "Oh wow this is great!!! I saw them at the Maymont plant sale the other weekend and was able to get one of their guides. Everyone needs one of these. It's priceless."

Regional Native Plant Marketing Campaign Model Expanding State-Wide

Virginia CZM and DGIF are partnering to build the capacity of regional and local partners to apply the regional native plant marketing model beyond Virginia's coastal zone (see map on page 17). In July and August, staff conducted workshops in Culpeper, Harrisonburg and Rocky Mount. As a result, two new regional campaigns are under development. A *Plant Southern Piedmont*



(left) A Plant RVA Natives exhibit at the Executive Mansion during Historic Garden Week was an opportunity to present First Lady Pam Northam with a “Plant Virginia Natives” garden sign, handmade by a VNPS member. (l to r: Virginia Witmer, VA CZM; Nancy Vehrs, VNPS; First Lady Northam and Leslie Allanson, VNPS). Photo courtesy of Governors Office. (right) First Lady Northam and her Chief of Staff, David Cary, sign the pledge to plant RVA natives. Photo by Virginia Witmer.



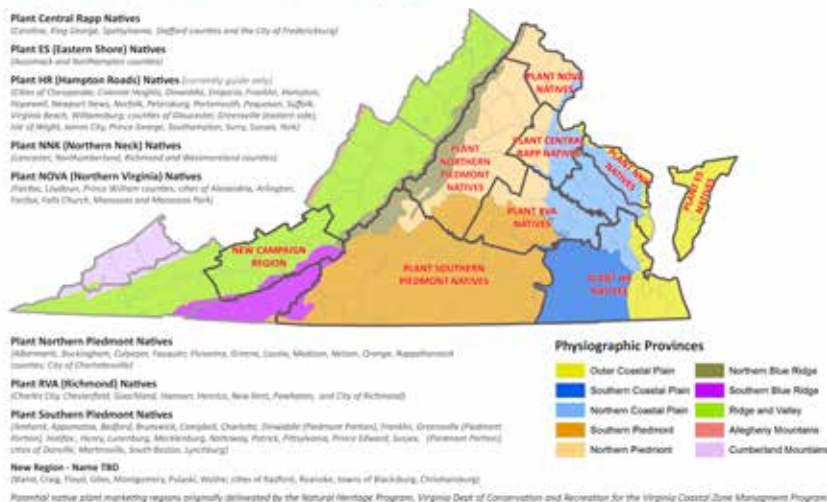
Eva Clarke, James River Garden Club, staffed the campaign exhibit at Agcroft Hall during the May Pedal through Petals event. Photo courtesy of JRGC.

Natives campaign will first be piloted in the West Piedmont Planning District Commission. (The *Plant Piedmont Natives* campaign has been renamed *Plant Northern Piedmont Natives*.) Regional partners also will meet in 2020 to form a new campaign in the lower Ridge and Valley physiographic province.

The growing state-wide initiative will continue the goals of the campaign work in Virginia's coastal zone:

1. Increase the knowledge and use of plants native to the region, according to the Flora of Virginia.
2. Help landowners learn more about their property and the benefits of a native plant landscape and conservation landscaping, and how by planting natives they can impact the ecological diversity and sustainability of natural landscapes beyond their property, neighborhood, and community.

Virginia Regional Native Plant Campaigns



3. Engage with local garden centers in the region to promote the native plants they currently carry and to increase the supply and variety of the native plants they carry.
4. Engage with local jurisdictions on policies that could be strengthened in favor of native plant landscaping.

The regional native plant marketing model leverages partner resources, creates consistent messaging and provides a rallying point for partners. The Virginia Native Plant Society, will focus their 2020 fundraising efforts on helping to print regional guides.

Together with these partners, Virginia CZM has been helping grow public demand for, and a social norm in favor of, native plants. In 2009, prior to the Plant ES Natives campaign, the program heard natives still described as scraggly and weedy. Ten years later, with campaigns spreading state-wide, that perception is fading away garden by garden. 🐾

For more information, contact Virginia.Witmer@DEQ.virginia.gov; (804) 698-4320; and, visit PlantVirginiaNatives.org.

Plant NOVA Natives Reaches Out to Landscapers



In August, the **Plant NOVA Natives** campaign seeded the native plant message among landscape professionals at a conference held at Merrifield Garden Center. Over one hundred attendees heard presentations focused on how to promote native plants to customers. The Northern Virginia Nursery and Landscape Association, Audubon, and Chesapeake Bay Landscape Professionals Program assisted in planning, and funds were provided by Transurban's Express Lanes Community Grant Program.

STRENGTHENING CZM POLICIES

Concise Policies for Federal Consistency

By Shep Moon, Virginia CZM

As an incentive for states to participate in the federal Coastal Zone Management Program, the federal Coastal Zone Management Act requires federal agencies to conduct their activities (including the authorization of licenses and permits and award of financial assistance) in a manner consistent with approved state CZM Programs' **enforceable** coastal policies. In order to receive approval from the National Oceanic and Atmospheric Administration (NOAA) and receive this "federal consistency" authority, states must show that they have adequate policies in place to manage coastal uses and resources. When the Virginia CZM Program was approved in 1986, the enforceable policies were documented in a Final Environmental Impact Statement (FEIS) that included an extensive list of state laws and regulations under the following categories:

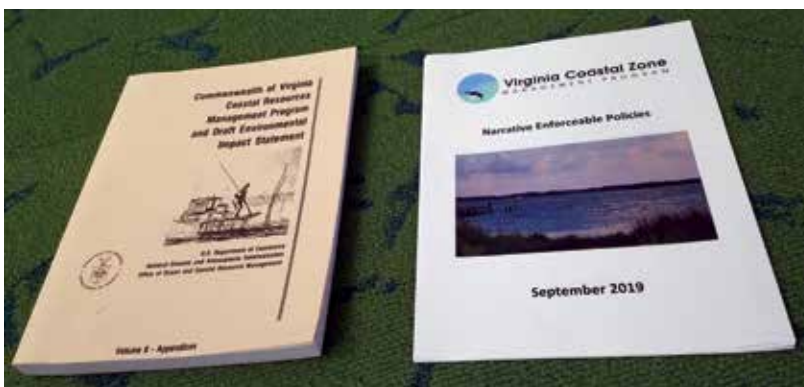
- *Fisheries Management*
- *Subaqueous Lands Management*
- *Wetlands Management*
- *Dunes Management*
- *Non-point Source Pollution Control*
- *Point Source Pollution Control*
- *Shoreline Sanitation*
- *Air Pollution Control*
- *Coastal Lands Management*

This original approach had several drawbacks. First, because laws and regulations may change over time, each change had to be submitted to NOAA as a "routine program change" or "program amendment." This might include instances of a simple recodification, minor changes in policy details, or even movement of a program from one agency to another. After they were documented, each change had to be reviewed and approved by NOAA and affected federal agencies and the public had to be notified. Keeping the

"The hope is that as a result of this effort, both federal project proponents and state agency reviewers will have a clearer understanding of Virginia's policies and eliminate the need for frequent routine program changes."

policies up to date required a significant commitment from both Virginia CZM and NOAA staff. Because of the time commitment and need for legal analysis of the impact of the changes, the Virginia CZM Program often needed outside assistance, which required the use of grant funds for outside legal services.

A second, and probably more important, drawback was a lack of clarity regarding Virginia's federal consistency policies for both project proponents and project reviewers. As the lead agency for Virginia CZM, the Department of Environmental Quality (DEQ), through the Office of Environmental Impact Review, coordinates the Commonwealth's review of federal consistency projects with the agencies that administer the enforceable policies. The enforceable policies are formally contained within the FEIS and consist of code and regulation references. Short summaries of the enforceable policies are provided on the DEQ website of the categories above. This can present a challenge for project proponents to understand the Commonwealth's expectations for the standards to be met in order for a federal project to be deemed consistent with the state's CZM program.



The original policies document is 291 pages and 3/4 inch thick compared to the new 18 page narrative policies document. Photo by Laura McKay.

On the flip side, state staff that review project submissions may also have a less than full understanding of Virginia's CZM enforceable policies. While state reviewers have a good grasp of their agencies' programs, they may not know which of those laws are included as enforceable policies



Virginia State Endangered Wilson's Plover. Photo by Russ Whitehurst. Aggressive, invasive non-native flora, such as Asian Wisteria, Japanese Honeysuckle and Multi-flora Rose can spread quickly, cover, and kill native vegetation. Photo by Jan Newton.

The draft now contains “policies for protecting state-listed threatened and endangered species and for protecting against invasive plants and animals.”

for the purpose of federal consistency. Because of this, some agencies may respond to federal consistency review requests with boiler-plate comments when a more project-specific reply would be more helpful. This issue has been compounded over time as agency reviewers change and historic knowledge of the consistency review process is lost.

Although Virginia's federal consistency review process has resulted in numerous improvements to proposals submitted over the years and helped to protect important coastal resources, many involved in the review process recognized that clearer guidance would be helpful in saving resources. So, NOAA suggested a complete revision of Virginia's policies in the form of a series of clear and concise “narrative enforceable policies.”

With agreement from the Coastal Policy Team, Virginia CZM began this revision process by providing a grant to the Virginia Coastal Policy Center (VCPC) at William and Mary for assistance in the effort. As part of the grant, the Center organized a series of meetings to evaluate each of the existing policy areas and to consider possible additional policies to strengthen the process. A committee was formed that consisted of the state's reviewing agencies, NOAA, the Office of the Attorney General and other interested parties such as federal project proponents and environmental advocacy groups.

NOAA staff provided guidance on developing new narrative policies which must meet three criteria:

1. Inclusion of a **standard** by which an activity can be determined to be consistent;
2. Inclusion of an **enforceable mechanism** based on state law to apply the standard, i.e., a means to compel someone to do or not do something; and
3. **Approval by NOAA** as an “enforceable policy.”

With these criteria in mind and with on-going guidance from NOAA staff and state agencies, the VCPC has developed a set of draft narrative enforceable policies that are significantly more concise. In addition to the existing policy areas, the draft also contains newly added policies for protecting state-listed threatened and endangered species, state parks and natural area preserves as well as for protecting against invasive plants and animals and noxious weeds.

The draft policies, approved by the Coastal Policy Team at the September 12, 2019 meeting, will be submitted to NOAA, affected agencies and the public for review.

As a result of this effort, both federal project proponents and state agency reviewers will have a clearer understanding of Virginia's policies and eliminate the need for frequent routine program changes. Once approved by NOAA, this change should result in enforceable policies for federal consistency review that put Virginia in a better position to protect and manage its coastal resources. 🐦

For more information, contact Shep.Moon@DEQ.virginia.gov; (804) 698-4527 or Bettina.Rayfield@DEQ.virginia.gov; (804) 698-4204.

MAPPING OUR COASTAL RESOURCES

Digital Storytelling for Virginia's Coast

By Nick Meade, Virginia CZM

For over a decade, the Virginia CZM Program's online mapping system, Coastal GEMS, has provided planners, decision makers, and the public quick and easy access to a wealth of coastal resource spatial data and information.

Coastal GEMS has consistently leveraged the most up to date technologies to improve its user interface and add new features, tools, and data. Following that trend, a new version will be available soon that will allow users to display multiple years of aerial imagery, load map services from outside sources, view data attribute tables, locate all features within a specified distance of any location, and much more! Along with the updated mapping application, a new splash page will be rolled out with information about the Coastal GEMS application, data and partners, and links to story maps that highlight Coastal GEMS data.

"What are story maps?" Story maps combine text, maps, and other multimedia content to tell an interactive story. They can highlight spatial relationships, create awareness about specific issues, and engage people in an immersive educational experience.

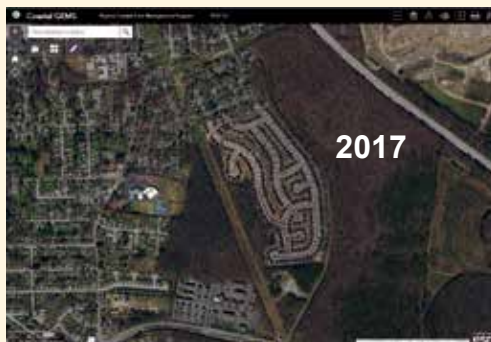
Use the links provided in the story map highlights below, or visit the Coastal GEMS page on the Virginia CZM website, to experience these stories now.

Additional Coastal GEMS story maps are on the way, including three currently under construction that will highlight rural working waterfronts.

Are there stories you would like to see mapped?

Contact Nick.Meade@DEQ.virginia.gov; (804) 698-4297.

See www.CoastalGEMS.org or www.deq.virginia.gov/Programs/CoastalZoneManagement/CoastalGEMS-GeospatialData.aspx.



Multiple years of aerial imagery will be available on the new version of Coastal GEMS and will allow users to observe land use change over time. Maps at left show recent new home construction expanding the footprint of the Robinson Terrace neighborhood in Newport News.



<https://arcg.is/0m9zv4>

Economics of Conserved Lands on Virginia's Eastern Shore Story Map

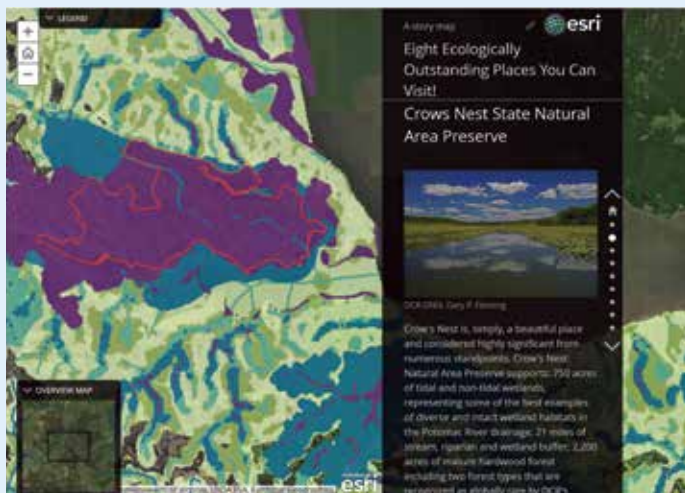
From an economic perspective, is land conservation good for our citizens? Studies have shown that conserved lands can have a positive economic impact on a community, but it depends on the specific budgets of the localities where the conserved lands are located. On Virginia's Eastern Shore, local government officials and residents had expressed concerns about a loss of tax revenue from conserved lands, but the conserved lands also add to the economy in many ways. This story map journal describes the results of a comprehensive Virginia CZM funded study by George Mason University of economic impacts of conserved lands on Virginia's Eastern Shore. How positive an economic impact do conserved lands have on the economies of Accomack and Northampton counties? Check out this story map to find out!



<https://arcg.is/1zqSi>

Coastal Virginia Ecological Value Assessment Story Map

The Coastal Virginia Ecological Value Assessment, or Coastal VEVA for short, is a conservation planning tool that synthesizes the best available natural resource datasets for Virginia's Coastal Zone into a single map. Coastal VEVA was created by Virginia CZM, in partnership with the Virginia Department of Conservation and Recreation Division of Natural Heritage, the Virginia Department of Game and Inland Fisheries, VCU Center for Environmental Studies, and VIMS Center for Coastal Resources Management. It provides guidance for land use management decisions by depicting areas of ecological importance. This cascade story map describes the Coastal VEVA dataset and includes information about how it was created, how it is used by VA CZM, and how you can use it too!



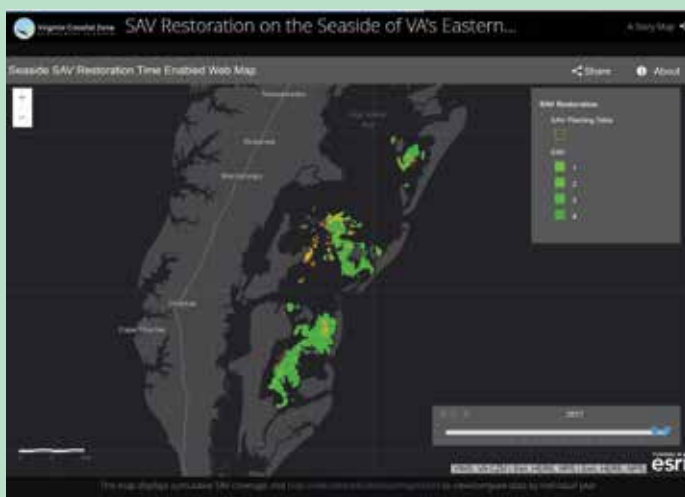
<https://arcg.is/101bLW>

Eight Ecologically Outstanding Places to Visit Story Map

Once you've learned all about Coastal VEVA, you might be curious about ecologically outstanding areas near you and how you could experience these special places for yourself. There are a number of areas that fall into Coastal VEVA's highest category that have already been preserved, and some of them do allow public access. This story map journal highlights eight publicly accessible places throughout Virginia's Coastal Zone that are ranked in the Coastal VEVA's highest category, Outstanding Ecological Value. Check them out virtually here, and then make plans to visit them in person!

Crows Nest Natural Area Preserve
Dragon Run State Forest
Chickahominy Wildlife Mgmt Area
First Landing State Park

Great Dismal Swamp National Wildlife Refuge (NWR)
Saxis Wildlife Management Area
Eastern Shore of Virginia NWF
Magothy Bay Natural Area Preserve



<https://arcg.is/C8Pnr>

Eelgrass Restoration on the Seaside of Virginia's Eastern Shore Story Map

Beneath the shallow waters of the Atlantic coast bays of Virginia's Eastern Shore, large fields of eelgrass now wave with the ocean tide, but this was not always the case. Historically, eelgrass flourished in these seaside bays, but in the 1930s a combination of powerfully destructive storms and a wasting disease wiped out most of the region's eelgrass beds. This cascade story map details the history and highly successful restoration of eelgrass on the seaside of VA's Eastern Shore. The story map features a time enabled interactive map of submerged aquatic vegetation (SAV) planting sites and coverage so that you can watch (or control it yourself via the slider bar) the spread of eelgrass over time in Virginia's seaside bays!

REDUCING MARINE DEBRIS

Tackling Marine Debris at the Mid-Atlantic Scale

By Laura McKay, Virginia CZM

With representatives from state, federal and non-profit organizations, the Mid-Atlantic Marine Debris (Mid-A MD) Work Group is a powerhouse of action. The 30-member group was originally created under the 2016 Mid-Atlantic Ocean Action Plan, but now operates under the auspices of MARCO's Mid-Atlantic Committee on the Ocean (*see page 2 for more details*).

Monthly calls, led by the Virginia CZM Program, keep the group in close contact and on track with achievement of multiple goals. The annual work plan and progress reports are shared publicly on MARCO's website at <http://midatlanticocean.org/work-groups/>.

Mid-Atlantic Marine Debris Projects Database

To keep everyone up to speed on who is doing what and where, Mid-A MD Work Group members enter their state's projects into a NOAA-supported regional database at <https://midatlantic-mdc.diver.orr.noaa.gov/#>. This collaborative site shows where projects are located, who is conducting them, their start and end dates, funding amount and source of funds, and brief descriptions of the projects. Having a single database for the region ensures efforts are not duplicated in the same place but also that lessons learned can be easily shared among a variety of entities. Over fifty projects have been entered into the database, and there are still more to be added. The site also tracks events and funding opportunities.



Screenshot of NOAA Marine Debris Program's Marine Debris Collaborative website.



Summit attendees gather around a sea turtle sculpture filled with balloon debris found on Virginia's barrier islands. Photo courtesy of NOAA.

Mid-Atlantic Marine Debris Summit

In June, through a Virginia CZM grant to Clean Virginia Waterways at Longwood University, the Mid-A MD Work Group held a first-ever, Mid-Atlantic Marine Debris Summit. With over 115 attendees and 32 presentations, much was learned and shared. A presentation by Jim Toomey, world-renowned and syndicated cartoonist of the Sherman's Lagoon comic strip was a major highlight that helped the group understand how to bring humor to the serious message of decreasing marine debris. Presentations are available on the Virginia CZM website at www.deq.virginia.gov/Programs/CoastalZoneManagement/VirginiaCZMIssuesInitiatives/MarineDebris/2019Mid-AtlanticMarineDebrisSummit.aspx.



Jim Toomey captivates summit attendees with his artistry at combining his love for humor, art, and the ocean. Photo by Virginia Witmer, Virginia CZM.



Disposable coffee pods find their way to a deserted beach. Photo by Christina Trapani.

Mid-Atlantic Balloon Release Reduction Campaign

In late 2018, the Mid-A MD Work Group received a major grant from NOAA to expand Virginia's balloon release reduction social marketing campaign to the entire Mid-Atlantic. This past year the group has been working with the marketing firm, OpinionWorks, to survey folks in the Mid-Atlantic as to their understanding of and attitudes toward balloon releases. With coaching from social marketing expert and author, Doug McKenzie-Mohr, the group is developing messages to discourage balloon releases that will overcome barriers to this behavior change and suggest alternatives that satisfy people's needs for creating a spectacle or activity that expresses their joy, sadness or other emotions.

Mid-Atlantic Marine Debris Reduction Plan

One outcome of the Summit is an agreement to move ahead with development of a reduction plan for the entire region. Virginia's plan, developed in 2013, is providing a model for this NOAA-led effort to which the work group will contribute.

For more information, contact Laura.McKay@DEQ.virginia.gov or (804) 698-4323.

What's on Virginia's Beaches?

New Report Documents Four Years of Monitoring



From April 2014 through June 2018 four relatively isolated Virginia beaches were monitored monthly for marine debris items: Chincoteague National Wildlife Refuge (NWR), Fisherman Island NWR, Back Bay NWR and Grandview Nature Preserve.

Having secured a grant from the NOAA Marine Debris Program, Virginia CZM funded the Virginia Aquarium & Marine Science Center, Clean Virginia Waterways of Longwood University and Christina Trapani Consulting to conduct the monitoring.



Photo by Christina Trapani.

The results were stunning. On these relatively inaccessible beaches, over 15,000 debris items were found in the four small survey areas that ranged from 1/5 acre to .4 acres. Eighty-three of the items were made of plastic; 55.5% of the items were documented on Fisherman Island at the mouth of Chesapeake Bay. Bottle caps topped the list at Back Bay and Fisherman; balloons at Chincoteague and building materials at Grandview. Cigarettes and plastic rope were also high on the list.

The 2019 final report is available at www.DEQ.virginia.gov/Programs/CoastalZoneManagement/VirginiaCZMIssuesInitiatives/MarineDebris.aspx.

PROMOTING SHELLFISH

Promoting Shellfish Aquaculture and Restoring Wild Oysters

By Laura McKay, Virginia CZM

We've come a very long way since the 1990s when serious consideration was given to listing our native oyster as endangered. Thanks to advances in the science of breeding disease resistance, improved water quality, careful management practices and major restoration efforts, our native oyster has made a brilliant come back. In 1999, the Virginia CZM Program made a major \$1.5 million dollar investment in the Oyster Heritage Program, which restored oyster reefs in the Rappahannock and Seaside Eastern Shore, catalyzing the practice of building 3-dimensional sanctuary reefs to "feed" nearby 2-D harvest reefs. Additional grants to the Marine Resources Commission (VMRC) and the Virginia Institute of Marine Science (VIMS) have allowed for development of improved commercial aquaculture leasing and permitting and promotion of "oyster gardening" for private use.

Today, Virginia's restaurants abound with oysters hailing from seven distinct Virginia regions. And, many participate in the VCU Rice Center Oyster Shell Recycling Program, to which Virginia CZM also contributes, helping to return valuable oyster shells back to Chesapeake Bay as substrate for new oyster growth.

Expanding Virginia's Oyster Industry While Minimizing Use Conflicts

In 2017, the Virginia CZM Program initiated a three-year grant effort with VIMS and MRC to assess the state of the

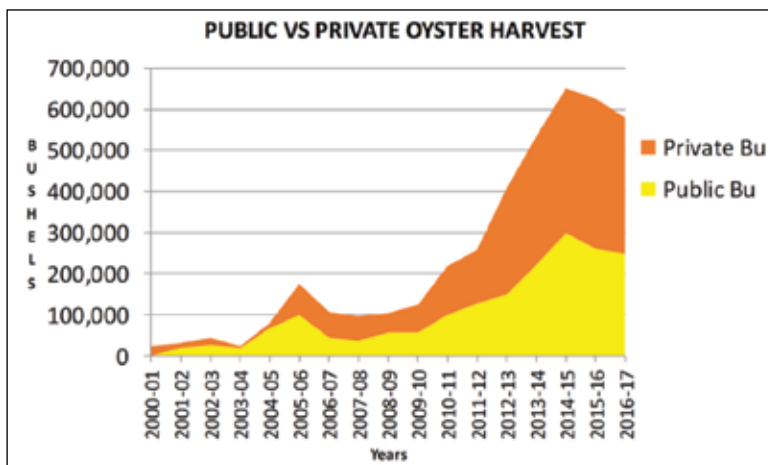


oyster industry. Through analysis of maps of the public (Baylor) oyster grounds and locations of restoration potential, it was revealed that the vast majority of Baylor grounds (78% of the 178,915 acres of Baylor grounds) not suitable for restoration.

Through analysis of harvest reports from private leases, which began to be required in 2006, it was revealed that only 34% of all private leases (of which there are about 4,000 covering just over 110,000 acres) reported harvest between 2013 and 2017. Only 10% of all reporting involved intensive aquaculture.

It has become clear that there is ample opportunity for expansion of shellfish aquaculture activity. However, it is critical to keep in mind use conflicts that can occur. Since Baylor grounds generally are located just offshore and throughout the center of rivers and creeks (see map above), space available for private leases is generally immediately adjacent to shore where homeowners are often bothered by the proximity of cultivation activities.

In addition to homeowner concerns, navigation needs, and recreational uses, MRC also has to consider protection of any submerged aquatic vegetation (SAV) beds. Research is underway by VIMS to analyze whether off-bottom aquaculture can be conducted in and around SAV beds without causing damage to the SAV.



Harvest trends in public and private oyster fishery (2000-2017). VIMS report to Virginia CZM Program (FY 17 Task 71).



As VIMS wraps up its second year of Virginia CZM funding, it will begin to draft recommendations for expanding shellfish aquaculture that take into account other coastal water uses.

Building Oyster Reefs in the Lynnhaven

Work is also continuing on restoration of wild oyster reefs. Many programs are engaged in oyster reef restoration and recently the NOAA Chesapeake Bay Office asked the Virginia CZM Program to serve as the conduit for \$575,000 in funding for reefs in the Lynnhaven River. In October 2018, those funds were added to the annual Virginia CZM award and subcontracted to VMRC. After completing all the required permitting, VMRC began to put shell in the water this fall.

The Lynnhaven is one of the tributaries included in the Chesapeake Bay Program's goal of restoring oyster populations in ten tributaries by 2025. The target for restoration in the Lynnhaven is 60 acres. Through this new grant and using a combination of shell, crushed concrete, stone, or other materials, VMRC will restore up to 10 acres towards the Bay Program goal. 🦀

For more information contact Laura.McKay@DEQ.virginia.gov.

(top) Oyster shells being "blown off" a barge alongside a marsh in the Lynnhaven River. These oysters will provide habitat, filter water and also protect the marsh from erosion. Photo courtesy of VMRC.

(middle) Map showing location of oyster reef restoration in the Lynnhaven River.

(bottom) Oyster shell delivered to Virginia Beach to be placed in the Lynnhaven River. Photo courtesy of VMRC.



FUNDING NEW PROJECTS AND INITIATIVES

Funding for 2019 Coastal Projects

By Laura McKay, Virginia CZM

This fall marks the 34th year of funding from NOAA to the Virginia CZM Program. With a total award of \$2,882,000 we are continuing our ongoing efforts such as program management and outreach, coastal environmental impact review, land acquisition and implementation and technical assistance grants to core agencies and planning district commissions. These continuing grants total \$1,978,153.

This will be the third year of the three-year “Focal Area” grants. These grants total \$400,847 and focus on promoting sustainable coastal industries (such as shellfish aquaculture and ecotourism) and coastal resiliency.

This year is the fourth year of the five-year “Section 309” grant strategies. These match-free grant strategies to develop new, enforceable policies focus on coastal hazards reduction; resource protection and sustainable economic activities for the lower Chickahominy watershed; ocean resources protection; and marine debris reduction. Funding for these Section 309 grants totals \$503,000.

Although the FY 2018 funding was higher due to a one-time addition of \$575,000 from the NOAA Chesapeake Bay

Virginia CZM Project Highlight: Marine Resources Commission Permits

During the 2017-18 grant year, these were the numbers:

- **1,955** - applications for projects involving state-owned submerged lands, wetlands or dunes
- **225,343** - largest square footage of habitat conversion - non-vegetated to vegetated wetland
- **199,459** - second largest square footage of habitat conversion - submerged land to intertidal riprap
- **39,632** - linear feet of living shorelines permitted
- **\$10,000** - possible civil charges per violation of deviation from permit specifications
- **434** - number of permit compliance checks funded with Virginia CZM funding
- **86%** - percentage of permittees found to be in compliance

Office for oyster restoration in the Lynnhaven (see page 25), this FY 2019 funding reflects a \$21,000 increase in our base award. 🐚

For more information contact Laura.McKay@DEQ.virginia.gov or (804) 698-4320 or April.Bahen@DEQ.virginia.gov; (804) 698-4005.

Welcome New Coastal Planner Jeff Flood



The Virginia CZM Program bid a fond farewell to Coastal Planner, Beth Polak last February and this May welcomed Jeff Flood. Before joining Virginia CZM, Jeff was an environmental consultant with Wetland Studies and Solutions, Inc. in Virginia Beach where he obtained wetlands permits, prepared Virginia CZM Federal consistency certification requests, assisted engineers with habitat restoration and mitigation banking design and provided GIS services. Jeff brings a wealth of knowledge and experience with environmental issues in the Hampton Roads region – one of his new Planning District Commission assignments.

Jeff earned a Master's in Marine Policy from University of Delaware, where his NOAA-funded research evaluated the cost-effectiveness of using oyster aquaculture for nutrient removal and provided policy recommendations for expanding Delaware's oyster industry. Jeff has a Bachelor's of Science in Marine Biology from UNC-Wilmington, where he completed coastal policy internships with Mississippi-Alabama Sea Grant Consortium, North Carolina Division of Coastal Management, and U.S. Senator Jim Webb (Virginia).

Jeff's passion for conserving coastal resources dates back to his childhood in Alexandria, where he participated in and organized several Coastal Cleanups with his Scout troop, and his long-standing participation in The Coastal Society from high school to the present.



Total Federal (NOAA Office for Coastal Management) Award: \$2,882,000

| Grantee | Title | Federal \$ | Match \$ | Total \$ |
|--|---|------------|-----------|-----------|
| Virginia CZM Program Implementation <i>(Total federal funds - \$1,632,003; total match funds - \$1,553,963)</i> | | | | |
| DEQ | Virginia CZM Program Management | \$334,500 | \$ 28,622 | \$363,122 |
| DEQ | Virginia CZM Program Outreach & Social Marketing | \$109,300 | \$ 8,457 | \$117,757 |
| VIMS | Virginia CZM Program Management Support | \$122,382 | \$ 0 | \$122,382 |
| VCU-CES | Coastal GEMS Support & Maintenance | \$111,620 | \$ 23,236 | \$134,856 |
| DEQ | Environmental Impact Review & Federal Consistency | \$183,400 | \$ 16,110 | \$199,510 |
| DEQ | Fairfax County Stormwater Local Assistance-Match Only | \$ 0 | \$952,795 | \$952,795 |
| VMRC | Permit Review and Compliance | \$181,200 | \$299,232 | \$480,432 |
| DCR-NH | Habitat Conservation/Locality Liaison | \$ 56,600 | \$ 59,461 | \$116,061 |
| VIMS | Tidal Wetlands Management Technical Support | \$ 47,550 | \$ 47,550 | \$ 95,100 |
| VIMS | SAV Mapping | \$ 68,000 | \$ 68,000 | \$136,000 |
| DCR-NH | Healthy Waters Program | \$ 30,500 | \$ 30,500 | \$ 61,000 |
| TBD | Land Acquisition | \$386,951 | \$ 20,000 | \$406,951 |

Regional Coastal Technical Assistance Programs *(Total federal funds - \$346,150; total match funds - \$444,266)*

| | | | | |
|----------------|---|-----------|-----------|-----------|
| ANPDC | Coastal Technical Assistance Program | \$ 34,500 | \$ 38,134 | \$ 72,634 |
| Crater PDC | Coastal Technical Assistance Program | \$ 34,500 | \$ 34,500 | \$ 69,000 |
| HRPDC | Coastal Technical Assistance Program | \$ 69,000 | \$ 69,000 | \$138,000 |
| MPPDC | Coastal Technical Assistance Program | \$ 34,500 | \$ 34,500 | \$ 69,000 |
| NNPDC | Coastal Technical Assistance Program | \$ 34,500 | \$ 34,500 | \$ 69,000 |
| NVRC | Coastal Technical Assistance Program | \$ 34,500 | \$128,963 | \$158,463 |
| GWRC | Coastal Technical Assistance Program | \$ 34,500 | \$ 34,500 | \$ 69,000 |
| RRPDC | Coastal Technical Assistance Program | \$ 34,500 | \$ 34,500 | \$ 69,000 |
| VA Beach/VAMSC | Marine Mammal and Sea Turtle Stranding Response | \$ 35,650 | \$ 35,669 | \$ 71,319 |

Three Year Competitive Focal Area Projects *(Total federal funds - \$400,847; total match funds - \$380,771)*

| | | | | |
|-------|---|-----------|-----------|-----------|
| VIMS | Expanding Oyster Industry - Minimizing Use Conflicts | \$ 70,000 | \$ 70,000 | \$140,000 |
| ANPDC | Oyster & Water Trail Ecotourism | \$110,000 | \$100,602 | \$210,602 |
| DEQ | Public Access Signage at Virginia CZM Projects | \$ 20,000 | \$ 0 | \$ 20,000 |
| VIMS | Expanding Natural Infrastructure | \$ 70,000 | \$ 70,000 | \$140,000 |
| VIMS | Living Shoreline Performance | \$ 40,000 | \$ 41,258 | \$ 81,258 |
| NVRC | Building Coastal Resiliency | \$ 59,223 | \$ 67,287 | \$126,510 |
| HRPDC | Vulnerability to Sea Level Rise Based on Elevation Data | \$ 31,624 | \$ 31,624 | \$ 63,248 |

Five Year Policy Development Projects *(Total federal funds - \$503,000; no match required)*

| | | | | |
|----------------|--------------------------------------|-----------|------|-----------|
| VIMS | Road Flooding Analysis | \$ 70,000 | \$ 0 | \$ 70,000 |
| VIMS | Living Shoreline Contractor Training | \$ 45,000 | \$ 0 | \$ 45,000 |
| W&M | Expanded RAFT Coverage | \$ 40,000 | \$ 0 | \$ 40,000 |
| Wetlands Watch | Resilience Proposal Database | \$ 25,000 | \$ 0 | \$ 25,000 |
| RRPDC | Chickahominy Project | \$160,000 | \$ 0 | \$160,000 |
| VCU | Ocean Stakeholder Coordination | \$ 48,000 | \$ 0 | \$ 48,000 |
| TBD | Ocean Data Collection | \$ 55,000 | \$ 0 | \$ 55,000 |
| Longwood U. | Marine Debris Reduction Plan | \$ 60,000 | \$ 0 | \$ 60,000 |

| | | | |
|--|--------------------|--------------------|--------------------|
| FY 19 (October 2019 - September 2020) GRAND TOTAL | \$2,882,000 | \$2,379,000 | \$5,261,000 |
|--|--------------------|--------------------|--------------------|

FUNDING NEW PROJECTS & INITIATIVES

Focusing on Future Funding

By Jeff Flood, Virginia CZM

Periodically, Virginia CZM staff perform self-evaluations of the program and identify new sources of funding as well as methods of collaboration with stakeholders. Two major methods of the program assessment and strategy development are detailed below and provide an opportunity for Virginia CZM's numerous partners and members of the public to participate in shaping both the short-term and long-term direction of the program.

Next 3-Year Focal Areas (2020-2023)

Every three years, Virginia CZM staff, with input from our interagency Coastal Policy Team (CPT), identify one or two particular issues on which to focus about \$400,000 of our annual grant funds. Since 1999, these "Focal Areas" have included the Oyster Heritage Program, Seaside Heritage Program, blue-green infrastructure, climate adaptation and promotion of sustainable industries such as shellfish aquaculture and ecotourism.

Virginia CZM has entered the third year of the current three-year cycle and is working on projects to promote sustainable coastal industries and building natural and community climate resiliency.

Climate resiliency was selected by the CPT as the next focal area theme at a meeting on September 12. A follow-up meeting was held on November 18th with Ret. Admiral Ann Phillips, Special Assistant to the Governor for Coastal Adaptation and Protection. Grant applicants presented their proposals and discussed how they could help meet the needs being identified in the statewide resiliency plan. Project ideas included increasing technical capacity (through use of tools like RAFT and CRS - see pages 8-11), continuing to promote ecotourism as a way to derive economic benefit from conserved lands that provide climate resiliency, development



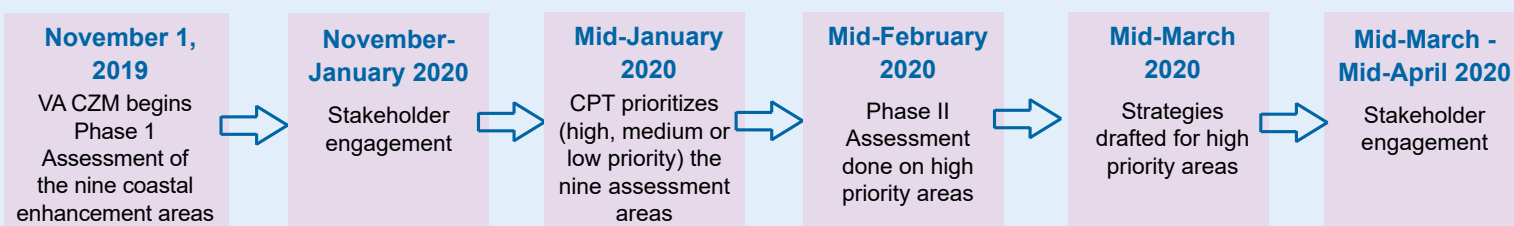
The 65 members of the Coastal Policy Team, shown above at a meeting on September 12, 2019, represent 13 state agencies and 8 coastal PDCs, and illustrate the breadth of the issues that fall under coastal zone management in Virginia. Photo by Jeff Flood.

of project designs to restore or create climate resilient habitats and identification of high priority habitats. This Focal Area will also pair well and continue the progress made under the current five year (2016-2020) Coastal Hazards strategy and is likely to be incorporated into the next five-year "Coastal Zone Enhancement" grant strategy currently being developed. (See *table at right for current strategies.*)

Next 5-Year Policy Strategies (2021-2026)

Coastal Zone Enhancement grants are another section of Virginia CZM funding that run on five-year cycles. These match-free grants are used to develop new enforceable policies in one or more of nine areas defined in the Coastal Zone Management Act: wetlands, coastal hazards, public access, marine debris, cumulative and secondary impacts, special area management plans, ocean resources, energy and government facility siting, and aquaculture. Currently, Virginia CZM is working to promote and improve resiliency in coastal communities by addressing coastal hazards, mitigating cumulative and secondary impacts, and protecting ocean resources. Projects include the development of a watershed plan for the Lower Chickahominy River, preserving rural working waterfronts, and addressing the growing problem of marine debris, among others.

Coastal Needs Assessment & 5-Year Strategy Timeline (2021-2025)





Current (2016-2020) Enhancement Strategy Funding (\$2,515,000)

| | |
|--|-----------|
| Enforceable Policies | \$42,320 |
| Coastal Hazards | \$846,050 |
| <i>Shoreline Plan & Policy Development</i> (\$516,599) | |
| <i>Community Resiliency Plans</i> (\$324,051) | |
| Cumulative & Secondary Impacts of Growth & Development | \$831,750 |
| <i>Leveraging Economic Benefits of Land Conservation in the Lower Chickahominy Watershed</i> (\$684,250) | |
| <i>Working Waterfronts Implementation</i> (\$147,500) | |
| Ocean Resources & Marine Debris | \$806,280 |
| <i>Ocean Planning</i> (\$251,821) | |
| <i>Ocean Data Collection</i> (\$234,970) | |
| <i>Marine Debris Reduction</i> (\$313,489) | |

The first step in the program review process, which began on October 1st, is for the Virginia CZM staff to conduct a high-level (Phase I) assessment and to solicit input from program partners concerning policy needs within each of the nine enhancement areas. This includes analysis of the current status and effectiveness of existing management efforts and identification of opportunities for improvement. The next step is to rank each of the nine topics as a high, medium or low priority.

For those areas identified as “high priority,” an in-depth (Phase II) assessment will be conducted and used to determine for which topics a five-year grant strategy will be developed (see timeline below). Each strategy may include several related projects over the five years. Like the Phase I assessment, Phase II will also involve consultation with program partners and the public.

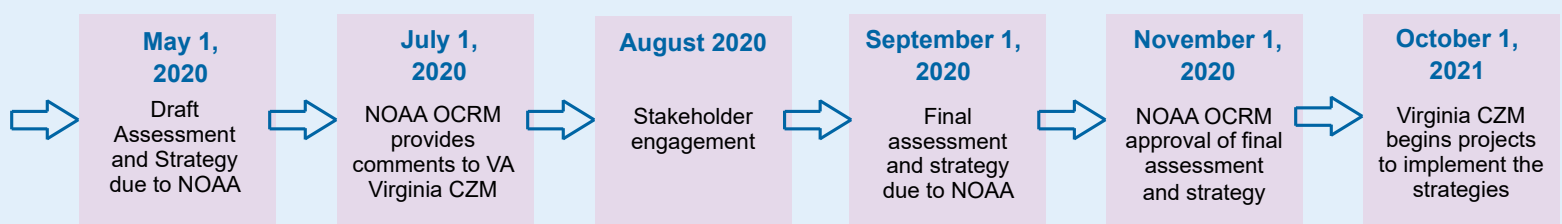
It is this latter element, stakeholder engagement, that presents Virginia CZM staff with a unique opportunity to increase both public awareness of the program and solicit feedback from those who would like to contribute to the development of our next five-year strategy. Virginia CZM staff are in the process of providing information on the evaluation through a series of presentations at meetings

hosted by the eight coastal PDCs. These presentations have been tailored by Virginia CZM staff to uniquely fit the needs of each set of local stakeholders represented by that PDC in order to facilitate discussion to identify both common challenges and opportunities. These informational meetings and listening sessions are scheduled to last until late March 2020, whereupon Virginia CZM staff will look to consolidate the public feedback into the development of a draft strategy. This draft document will be made available for public comment during the month of April 2020.

The draft of the Virginia Coastal Needs Assessment for 2021-2025 will be submitted to NOAA on May 1, 2020 for review and approval. NOAA comments are due back to Virginia CZM on July 1, 2020 with the final 309 Assessment and Strategy to be completed by September 1, 2020 and grants will begin in October 2021 and be completed by September 2025.

We welcome your comments. Look for notices and postings of the documents on our website. 🐬

For more information, contact Laura.McKay@DEQ.virginia.gov; (804) 698-4323, Shep.Moon@DEQ.virginia.gov; (804) 698-4527, or Jefferson.Flood@DEQ.virginia.gov; (804) 698-4151.



Please circulate this publication to other interested parties.

NEW VIDEOS

Restoring Underwater Prairies



<https://magazine.wm.edu/issue/2019-winter/splendor-in-the-grass.php>

The Atlantic bay scallop was once wiped out on Virginia's Eastern shore after disease and Mother Nature destroyed their seagrass habitat. Restoring seaside eelgrass and bay scallops has been one of the largest initiatives, financial investments and longest running efforts of Virginia CZM. With funds from NOAA, the program has provided about \$2 million to VIMS to restore seagrasses and bay scallops since the efforts began in 1999. Learn more and watch the amazing story in a new video developed by W&M/VIMS with Virginia CZM funding.

Say No to Letting It Go!



<http://preventballoonlitter.org/>

Released balloons are one of the most harmful and deadly litter items to wildlife. Many drift out over the ocean and eventually fall to the water. Balloons were the most abundant type of waste on five remote Virginia beaches surveyed between 2013 and 2017. Hear what the experts have to say in "Balloon Litter: A Conversation." Watch a new animated video about the impacts of balloon debris in "Balloon Litter: Say No to Letting It Go!" Both videos were produced by Virginia CZM in partnership with Clean Virginia Waterways of Longwood University.